

### **REMARKS**

By this amendment, the specification and claims 1, 7 and 9 have been amended. Claim 7 has been amended to correct for grammatical errors. Claims 1-13 remain in the application. Support for the amendments can be found the specification and drawings. No new matter has been added. This application has been carefully considered in connection with the Examiner's Action. Reconsideration and allowance of the application, as amended, is respectfully requested.

### **Rejection under 35 U.S.C. §103**

Claim 1 recites a multi-channel encoder operable to process input signals conveyed in a plurality of input channels to generate corresponding output data comprising down-mix output signals together with complementary parametric data, the encoder including:

- (a) a down-mixer for down-mixing the input signals to generate the corresponding down-mix output signals; and
- (b) an analyzer for processing the input signals, said analyzer being operable to generate said parametric data complementary to the down-mix output signals, said encoder being operable when generating the down-mix output signals for also generating said parametric data configured (i) to allow for subsequent decoding of the down-mix output signals (ii) for predicting (iii)(1) signals of channels processed and (iii)(2) then discarded within the encoder, thereby enabling a subsequent decoding via a decoder to substantially regenerate with enhanced accuracy the corresponding discarded channels by predicting information of the discarded channels from the down-mix output signals and the parametric data.

Support for the amendment to claim 1 (as well as for the amendment to claim 9) can be found in the specification at least on page 6, lines 22-32; page 9, lines 25-31; and page 10, lines 1-20 (in particular, page 10, lines 3-6).

As presented herein, Claim 1 has been amended to more clearly articulate the novel and non-obvious distinct features thereof. For instance, as disclosed in the original specification on page 6, lines 22-32, “[O]utput signals of M down-mix channels generated by a fixed down-mix cannot be used to regenerate substantially perfect representations of original input signals of N channels when information relating to such N-M channels has been at least partially discarded during encoding. However, the inventors have appreciated that these N-M channels can at least partially be predicted [that is, in the decoder] when suitable processing is applied to the M down-mix channels, for example to the outputs 610, 620.” (*Emphasis added.*) Furthermore, as disclosed in the original specification on page 9, line 25 through page 10, line 6, “[T]he decoder 10 regenerating representations of the original input signals for CH1 to CH3 is *only capable* of generating *substantially perfect representations* when the two down-mix channels  $L_0[k]$  and  $R_0[k]$  are *supplemented with* an appropriate set of parameters to substantially regenerate the N-2 missing channels” and “information of the N-2 discarded channels can be predicted from the two down-mix channels  $L_0[k]$  and  $R_0[k]$ , thereby providing a way of *enhancing accuracy* of *regeneration* of the aforesaid representation of the original input signals of channels CH1 to CH3 at a corresponding decoder.” (*Emphasis added.*)

Claims 1-13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Craven et al. (US 7,193,538, hereinafter “**Craven**”), in view of Thumpudi et al. (PGPUB 2004/0049379, hereinafter “**Thumpudi**”). With respect to claim 1, Applicant respectfully traverses this rejection on the grounds that these references are defective in establishing a prima facie case of obviousness.

As the PTO recognizes in MPEP §2142:

*... The examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness. If the examiner does not produce a prima facie case, the applicant is under no obligation to submit evidence of nonobviousness...*

It is submitted that, in the present case, the examiner has not factually supported a prima facie case of obviousness for at least the following reasons.

### **1. Even When Combined, the References Do Not Teach the Claimed Subject Matter**

The **Craven** and **Thumpudi** references cannot be applied to reject claim 1 under 35 U.S.C. §103 which provides that:

*A patent may not be obtained ... if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains ... (Emphasis added)*

Thus, when evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. However, since neither **Craven** nor **Thumpudi** teaches a multi-channel encoder featuring an “analyzer ... operable to generate ... parametric data ... configured (i) to allow for subsequent decoding of the down-mix output signals (ii) for predicting (iii)(1) signals of channels processed and (iii)(2) then discarded within the encoder, thereby *enabling* a subsequent *decoding* via a decoder to substantially regenerate with enhanced accuracy the corresponding discarded channels by predicting information of the discarded channels from the *down-mix output signals* and the *parametric data*” (emphasis added) as is claimed in claim 1, it is impossible to render the subject matter of claim 1 as a whole obvious, and the explicit terms of the statute cannot be met.

In contrast, **Thumpudi** discloses multi-channel audio encoding and decoding using a variety of techniques to improve a quality of multi-channel audio data. In particular, **Thumpudi** teaches that “multi-channel post-processing can be used for many different purposes. For example, the number of decoded channels may be *less than* the number of channels for output (e.g., because the *encoder dropped* one or more *input channels* or *multi-channel transformed channels to reduce* coding complexity or buffer fullness). If so, a multi-channel post-processing transform can be used to create one or more *phantom* channels based on actual data in the decoded channels. ...” (*emphasis added*, see Thumpudi at paragraph [0377] ). It is noted that **Thumpudi** thus teaches *dropping* one or more input channels to *reduce* a coding complexity, which *teaches away* from performing additional coding by the encoder. In addition, the one or more *phantom* channels of **Thumpudi** are based on actual data in the *decoded* channels alone. Accordingly, the **Thumpudi** reference does not disclose a multi-channel encoder featuring an “analyzer ... operable to generate ... parametric data ... configured (i) to allow for subsequent decoding of the down-mix output signals (ii) for predicting (iii)(1) signals of channels processed and (iii)(2) then discarded within the encoder, thereby *enabling* a subsequent *decoding* via a decoder to substantially regenerate with enhanced accuracy the corresponding discarded channels by predicting information of the discarded channels from the *down-mix output signals* and the *parametric data*” as is claimed in claim 1.

Thus, for this reason, the examiner’s burden of factually supporting a *prima facie* case of obviousness has clearly not been met, and the rejection under 35 U.S.C. §103 should be withdrawn.

## 2. The Combination of References is Improper

Assuming, arguendo, that the above argument for non-obviousness does not apply (which is clearly not the case based on the above), there is still another compelling reason why the **Craven** and **Thumpudi** references cannot be applied to reject claim 1 under 35 U.S.C. §103.

§2142 of the MPEP also provides:

*...the examiner must step backward in time and into the shoes worn by the hypothetical 'person of ordinary skill in the art' when the invention was unknown and just before it was made.....The examiner must put aside knowledge of the applicant's disclosure, refrain from using hindsight, and consider the subject matter claimed 'as a whole'.*

Here, neither **Craven** nor **Thumpudi** teaches, or even suggests, the desirability of the combination since no one of the references teach the specific multi-channel encoder featuring an “analyzer ... operable to generate ... parametric data ... configured (i) to allow for subsequent decoding of the down-mix output signals (ii) for predicting (iii)(1) signals of channels processed and (iii)(2) then discarded within the encoder, thereby *enabling* a subsequent *decoding* via a decoder to substantially regenerate with enhanced accuracy the corresponding discarded channels by predicting information of the discarded channels from the *down-mix output signals* and the *parametric data*” as specified above and as claimed in claim 1.

Thus, it is clear that none of the references provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. §103 rejection.

In this context, the MPEP further provides at §2143.01:

*The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.*

In the above context, the courts have repeatedly held that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination.

In the present case it is clear that the combination presented in the Office Action arises solely from hindsight based on the invention without any showing, suggestion, incentive or motivation in either reference for the combination as applied to claim 1. Therefore, for this reason, the examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met, and the rejection under 35 U.S.C. §103 should be withdrawn.

Accordingly, claim 1 is allowable and an early formal notice thereof is requested. Claims 2-8 and 11-13 depend from and further limit independent claim 1 and therefore are allowable as well. The 35 U.S.C. §103(a) rejection thereof has now been overcome.

With respect to claim 9, the same includes similar limitations as found with respect to claim 1. Claim 9 is thus believed allowable over the **Craven** and **Thumpudi** references for at least the reasons stated herein above with respect to overcoming the rejection of claim 1. Accordingly, claim 9 is allowable and an early formal notice thereof is requested. The 35 U.S.C. §103(a) rejection thereof has now been overcome.

Claims 10 depends from and further limits independent claim 9 and therefore is allowable as well. The 35 U.S.C. §103(a) rejection thereof has now been overcome.

### **Conclusion**

Except as indicated herein, the claims were not amended in order to address issues of patentability and Applicants respectfully reserve all rights they may have under the Doctrine of Equivalents. Applicants furthermore reserve their right to reintroduce

subject matter deleted herein at a later time during the prosecution of this application or a continuation application.

It is clear from all of the foregoing that independent claims 1 and 9 are in condition for allowance. Claims 2-8 and 11-13 depend from and further limit independent claim 1 and therefore are allowable as well. Claim 10 depends from and further limits independent claim 9 and therefore is allowable as well.

The amendments herein are fully supported by the original specification and drawings; therefore, no new matter is introduced. An early formal notice of allowance of claims 1-13 is requested.

Respectfully submitted,

/Michael J. Balconi-Lamica/

Michael J. Balconi-Lamica  
Registration No. 34,291  
for Edward Goodman, Reg. No. 28,613

Dated: December 1, 2009  
Philips Intellectual Property & Standards  
345 Scarborough Road  
Briarcliff Manor, New York 10510  
Telephone: 914-333-9611  
Facsimile: 914-332-0615  
File: NL040657US1

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